

WHAT IS CLAIMED IS:

1. A method of controlling wireless communication between a first wireless communication device and a plurality of further wireless communication devices, comprising:

5 the first device attempting to perform a plurality of communications with the further devices via a wireless communication link during respective transmission time slots of a transmission period that have been assigned to the respective communications;

the first device determining which of said communications has been successfully performed and which of said communications has not been successfully performed;

responsive to said determining step, the first device assigning to respective retransmission time slots of a retransmission period a plurality of further communications between the first device and the further devices; and

15 for each of the further communications, one of the first device and the further devices transmitting the further communication via the wireless communication link during the retransmission time slot assigned to the further communication.

2. The method of Claim 1, wherein said communications and said further communications each include a transfer of a packet of information between the first device and one of the further devices.

3. The method of Claim 2, wherein said determining step includes the first device determining that the first device needs to retransmit to one of the further devices during the retransmission period a first packet that was transmitted by the first device to the one further device during the transmission period, and the first device also determining that the first device needs to transmit to a second further device during the retransmission period a second packet including an indication that the second further device should retransmit to the first device during the retransmission period a third packet that was transmitted by the second further device to the first device during the transmission period.

4. The method of Claim 3, wherein said assigning step includes assigning transmission of the first and second packets, respectively, to adjacent retransmission time slots.

5. The method of Claim 3, wherein said assigning step includes assigning transmission of both the first packet and said indication to a single retransmission time slot.

6. The method of Claim 5, wherein said transmitting step includes the first device incorporating said indication into the first packet and transmitting the first packet to the one further device via the wireless communication link during the single retransmission time slot.

7. The method of Claim 6, wherein said first packet is a packet according to Bluetooth protocol, said incorporating step including the first device using Bluetooth TYPE bits in the first packet to incorporate said indication into the first packet.

8. The method of Claim 1, wherein the first device is a master device and the further devices are slave devices, said assigning step including the first device assigning to a first retransmission time slot a first communication from the first device to one of the further devices and assigning to a second retransmission time slot adjacent the first retransmission time slot a second communication from the first device to one of the further devices.

9. The method of Claim 8, wherein the first and second communications are different from one another.

10. The method of Claim 8, wherein the first and second communications are both communications from the first device to the same one of the further devices.

11. The method of Claim 10, wherein the first and second communications are the same communication.

12. The method of Claim 1, wherein the first device is a Bluetooth master device, the second device is a Bluetooth slave device, the wireless communication link is a Bluetooth ACL link, and said communications and said further communications include coded speech information.

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16. The method of Claim 13, wherein said change in membership of said group of further devices is a decrease in membership, and said change in length of the retransmission period is an increase in length.

17. A wireless communication apparatus, comprising:

5 a wireless communications interface for attempting to perform a plurality of communications with a plurality of further wireless communication apparatuses via a wireless communication link during respective transmission time slots of a transmission period that have been assigned to the respective communications;

a controller having an input coupled to said wireless communications interface for receiving information indicative of which of said communications has been successfully performed and which of said communications has not been successfully performed, said controller responsive to said information for assigning to respective retransmission time slots of a retransmission period a plurality of further communications with the further apparatuses; and

15 said wireless communications interface having an input coupled to said controller and responsive thereto for performing said further communications via the wireless communication link during the respectively assigned retransmission time slots.

18. The apparatus of Claim 17, provided as a Bluetooth master device, and wherein the wireless communication link is a Bluetooth ACL link, and said communications and said further communications include coded speech information.

19. The apparatus of Claim 17, provided in a base unit of a cordless telephone system.

20. The apparatus of Claim 17, including one of a GSM EFR speech coder and a 32 kilobits/second ADPCM speech coder coupled to said wireless communications interface for permitting bidirectional communication of coded speech information over the wireless communication link.

21. The apparatus of Claim 20, wherein the wireless communications interface includes a switched antenna diversity section and a plurality of antennas coupled thereto for performing switched antenna diversity communications over the wireless communication link.

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22. The apparatus of Claim 17, wherein the wireless communications interface includes a switched antenna diversity section and a plurality of antennas coupled thereto for performing switched antenna diversity communications over the wireless communication link.